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(21)Application number :	01-201403	(71)Applicant :	ASAHI GLASS CO LTD
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(54) REMOVAL OF HARMFUL EFFECT FROM NITROGEN TRIFLUORIDE

(57)Abstract:

PURPOSE: To remove harmful effects in an efficient, easy and safe way without raising the problems of air pollution and working environment by a method wherein the gas contg. nitrogen trifluoride is mixed with water vapor and the nitrogen trifluoride is decomposed by reaction with water.

CONSTITUTION: The gas contg. nitrogen trifluoride (NF₃) is mixed with a 100% or inert gas-contg. water vapor produced by using distilled water. This mixture is then introduced into a reactor composed of a cylindrical reacting container and a heating device provided around it to undergo gas-phase reaction at a temp. of at least 300°C. The reaction $2\text{NF}_3 + 5\text{H}_2\text{O} \rightarrow 2\text{NO} + \text{HNO}_3 + 9\text{HF}$ takes place in the reactor and HNO₃ and HF are allowed to remain therein but NO is removed therefrom by washing with alkali, after oxidation with O₃. Being a gas or liq., these products offer no problem of clogging the reacting device. This method permits an efficient and easy treatment of NF₃, without forming the by-product such as the gas having explosiveness, toxicity, etc., leading to a safe removal of the harmful effects.